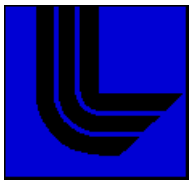
Workshop Welcome



Workshop on the Increased Use of Ethanol and Alkylates in Automotive Fuels in California

Oakland, California
April 10 - 11, 2001

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Environmental Protection Department
Lawrence Livermore National Laboratory

Background

- **Legislatively mandated University of California Study to evaluate impacts of MTBE.**
- **California Governor Davis issued Executive Order D-5-99 in March, 1999 calling for removal of MTBE from gasoline no later than December 31, 2002.**
- **The Executive Order required the Air Board, Water Board and Office of Environmental Health Hazard Assessment to prepare an analysis of potential impacts and health risks that may be associated with the use of ethanol as a fuel oxygenate.**
- **A copy of this report is included in your workshop package.**
- **Full report also available at: www-erd.llnl.gov/ethanol.**

Background - Continued

- **11 States have passed legislation to ban or limit the use of MTBE.**
  - **Arizona, California, Colorado, Connecticut, Iowa, Maine, Michigan, Minnesota, Nebraska, New York, and S. Dakota**
- **California has asked for a waiver of the fuel oxygenate mandate.**
- **Bottom line:**
  - **The composition of gasoline will change.**
  - **There will likely be an increased use of both ethanol and alkylates in gasoline**

Background - Continued

- **Conclusion presented to the California Environmental Policy Council:**
  - **The water resource impacts associated with the use of ethanol will be significantly less and more manageable than those associated with the continued use of MTBE**
  - **The key factor is the biodegradability of ethanol compared to MTBE.**
  - **A complete life cycle analysis that examines potential environmental trade-offs is needed for both ethanol and alkylates**

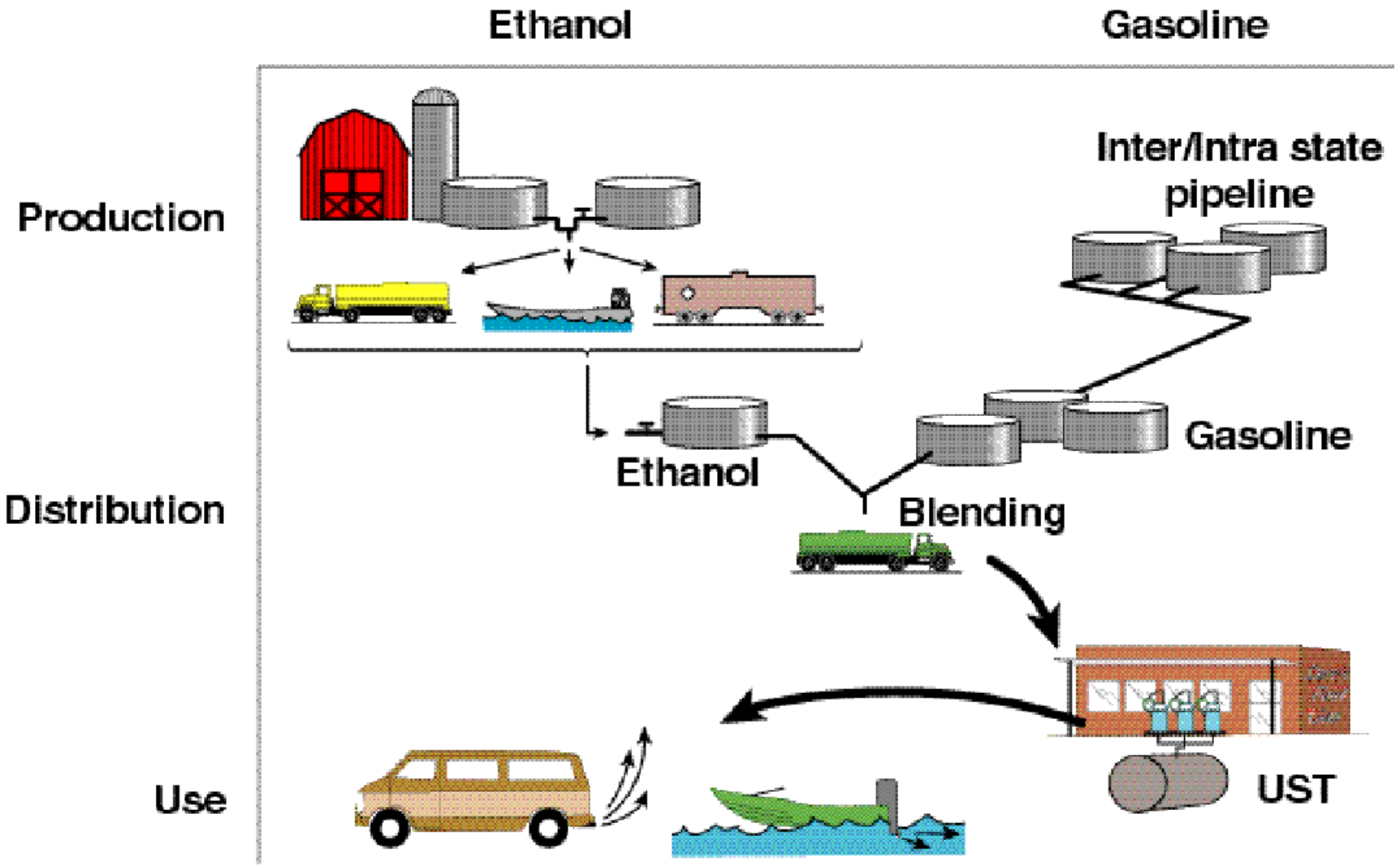
Background - Continued

- This workshop follows up on commitment to the California Environmental Policy Council to continue to examine life cycle environmental and resource management consequences of the increased use of ethanol and alkylates in gasoline

- Release scenarios were developed based on the production, distribution, and use of ethanol as a fuel oxygenate.
  - Not all release scenarios were evaluated.

- Need to evaluate the release scenarios for the production, distribution, and increased use of alkylates in gasoline.

Potential Ground and Surface Water Impacts – Ethanol Life Cycle



Goals of the Workshop

- **Review the existing state of knowledge on**
  - **physicochemical properties, multi-media transport and fate, exposure mechanisms**
  - **release scenarios associated with the production, distribution, and use of ethanol and alkylates in gasoline.**
- **Identify key regulatory, environmental, and resource management issues and knowledge gaps associated with anticipated changes in gasoline formulation in California.**
- **Develop a roadmap for addressing issues/knowledge gaps**

Workshop Attendees

- **This is a workshop, not a conference,**
  - **We encourage your active participation**
  - **Discussions that occur during this workshop will provide valuable information to decision-makers who must plan and prepare the infrastructure changes needed to safely and cost-effectively provide transportation fuels without MTBE.**
- **Major interest groups attending the workshop**
  - **Fuels-related companies**
  - **Regulatory Agencies**
  - **Universities/National Laboratories**

Welcome - Lets get started!

- David Rice, Workshop Director
- David Layton, Co-Workshop Director
- Cheryl Kuks, Workshop Coordinator
- Karen Pangelina, Co-workshop Director